Title: Understanding pore formation and structural deformation in carbon spheres during KOH activation

Author/Authors: Mohammed Salisu Musa, Mohd. Marsin Sanagi, Nur Hadi, W. A. Wan Ibrahim

Abstract: Carbon spheres (CSs) were synthesized from sucrose by hydrothermal reaction. The synthesized materials were further activated with potassium hydroxide (KOH) at different concentrations. The effects of KOH concentration on the surface area and morphology were investigated. The route for pore formation and structural deformation in carbon spheres during activation has been proposed and discussed based on micrographs and porosity trends. It was suggested that the pore formation and structural deformation phenomena were due to the intercalating power of energized K+ into the carbon. This work provides an insight of the pore formation in carbon spheres for the development of adsorbents as well as for the understanding of the structural deformation of such materials at higher KOH concentrations.